

Access Grid-to-H.323: From Demonstration to Beyond

Darleene M. Heath
NCREN

April 27, 2005



About MCNC: Private, Nonprofit Organization



- Established in 1980 as Microelectronics Center of North Carolina; Became **MCNC** in 1990
 - Founded by NC General Assembly as non-profit, state-funded resource for technology-led economic development
 - Focus on technology-based economic development
- Expanded in 1985 to include NC Networking
 - Provide high-speed network linking NC universities
 - Provide common platform for statewide research for academic institutions
- Operated NC Supercomputing Center 1988 - 2003
- Independent, nonprofit organization



About NCREN:

- Advanced high-speed statewide network serves all NC public universities and most private NC universities (incl. Duke & Wake Forest)



Interconnects 180+ research, education, gov't & commercial locations

Inter-campus (connects all members to each other)

Internet gateway access

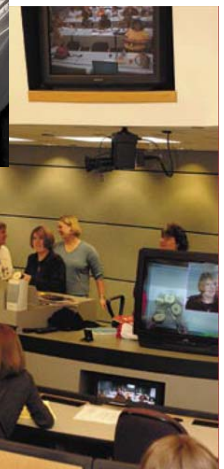
Internet2/Abilene Research Network

National Lambda Rail (NLR)
(NLR Experiments Support Services)

Data Center Services

Statewide Grid Services

Video Services



NCREN: Statewide Video Network

- One of the nation's 1st broadcast-quality, interactive video networks for distance learning (introduced in 1985)
- One of the nation's 1st Internet-based statewide video networks (implemented 2000)
- 50,000+ users accessed NCREN's video network in 2003/2004 academic year
- Video network handles approximately 100 hours of sessions each week
 - Ad hoc video access 24/7
 - Enables true virtual classroom
 - High-quality audio for continuous presence



*Video conference class
at Western Carolina
University*



*Video control room
at MCNC in RTP, NC*



NCREN: Statewide Video Network

- Provides centrally managed & coordinated services
- Enables fully interactive, face-to-face, live discussions
- Supports 23+ sites in a single session
- 80 x 120 Probel Video Router
- Interoperates 5 different audio/video technologies
 - Microwave
 - MPEG2
 - H.323
 - ISDN
 - Satellite



NCREN: Site Technologies & Rooms

| Institution | | Microwave | MPEG2 | H.323 | H.320 NCIH | H.320 Dialup (ISDN) | Minimum Channels | Minimum Rooms |
|-----------------------------------|--|-----------|-----------|-----------|---------------|---------------------------|---------------------|------------------|
| Appalachain State University | | 1 | 2 | 1 | | Yes | 4 | 4 |
| Duke University | | 2 | | 1 | | No | 3 | 2 |
| Duke University Medical Center | | 1 | 1 | | | Yes | 2 | 1 |
| East Carolina University | | | | 1 | Yes | Yes | 3 | 3 |
| East Carolina University Med. | | 2 | | 1 | Yes | Yes | 3 | 4 |
| Elizabeth City State University | | | 2 | 1 | | No | 3 | 2 |
| Fayetteville State University | | | 2 | 1 | | No | 3 | 2 |
| North Carolina A&T State Univ. | | 2 | 1 | 1 | Yes | Yes | 4 | 4 |
| North Carolina School of the Arts | | | 2 | 1 | | No | 3 | 2 |
| North Carolina Central University | | | 2 | 1 | | No | 3 | 3 |
| North Carolina State University | | 2 | 2 | 1 | | No | 5 | 17 |
| Research Triangle Institute | | 1 | | | | No | 1 | 2 |
| UNC at Asheville | | | 2 | 1 | | No | 3 | 4 |
| UNC at Charlotte | | 2 | | 1 | Yes | Yes | 3 | 3 |
| UNC at Chapel Hill | | 2 | | 1 | Yes | Yes | 3 | 5 |
| UNC School of Medicine | | 1 | | | | No | 1 | 6 |
| UNC at Greensboro | | | 2 | 1 | | No | 3 | 2 |
| UNC at General Administration | | | 4 | | | No | 4 | 4 |
| UNC at Pembroke | | | 2 | 1 | | Yes | 3 | 3 |
| UNC at Wilmington | | | 1 | 9 | | Yes | 10 | 5 |
| Western Carolina University | | | 2 | 1 | | No | 3 | 3 |
| Wake Forest Univ. Baptist Med. | | | | | | | 3 | 3 |
| Wake Forest Univ. Baptist Med. | | 1 | | 1 | | Yes | 2 | 2 |
| Winston Salem State University | | 2 | 1 | 1 | | No | 4 | 3 |
| | | 19 | 28 | 27 | | | 79 | 89 |



NCSA ACCESS

The facilities at NCSA ACCESS are designed specifically to handle multiple inputs of audio and video from multiple formats and able to move those sources into various outputs.

This AV system allows an operator at NCSA ACCESS to receive incoming video and audio signals from H32x systems and “push” them into the AccessGrid machines. In return, the operator is able to convert one of the display machine screens (with multiple video’s displayed) to the H32x system.

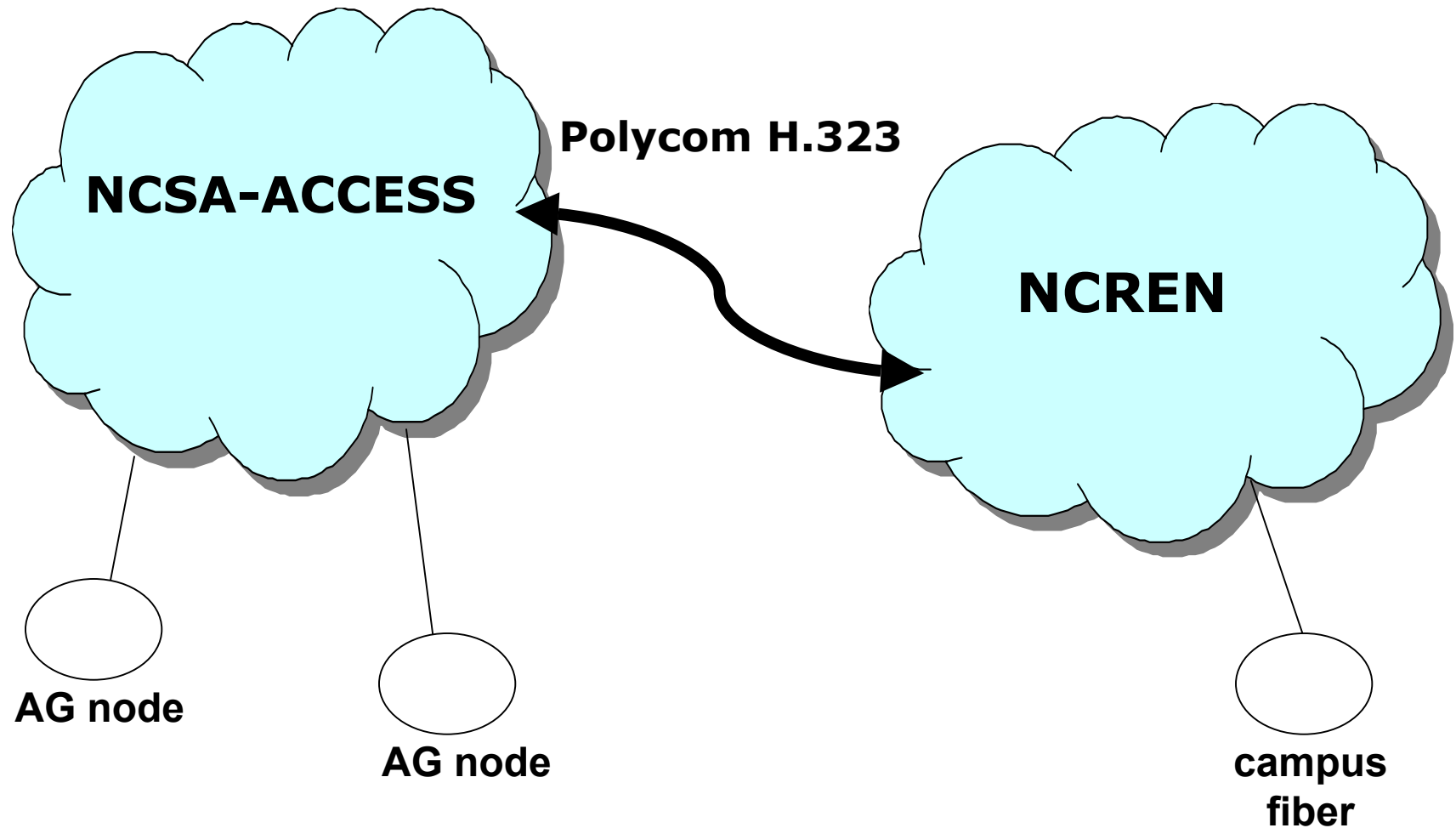


NCSA ACCESS

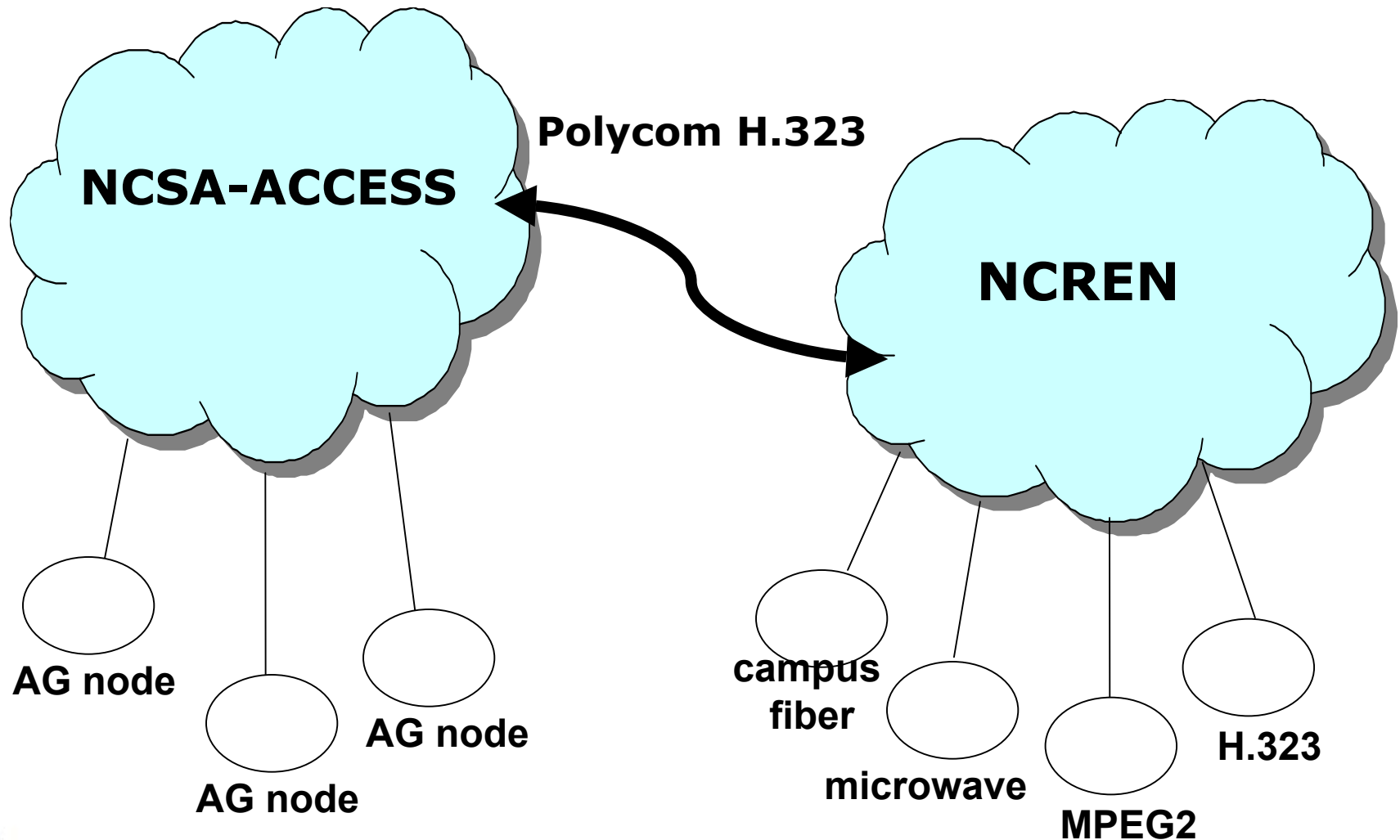
The concept of facilities designed specifically to handle multiple AV requirements, like NCSA's ACCESS in Arlington, Virginia and NCSA's TRECC in West Chicago is fundamental to linking together geographically and technically dispersed organizations and institutions to allow transparent collaboration and communications

For more info see: www.accesscenterdc.org

September 2004 Demo: Configuration



November 2004 Demo: Configuration



November 2004 Demo: Sites

Sites via Access Grid & NCSA-ACCESS:

TRECC

ECU Academic*

ECU Health Sciences*

Sites via H.323 & NCREN:

MPEG2

ECSU

FSU

NCARTS

UNC-A

UNC-G

UNC-OP

UNC-P

WCU

Microwave

ASU

NCA&T*

UNC-CH

UNC-CH Med

UNC-C

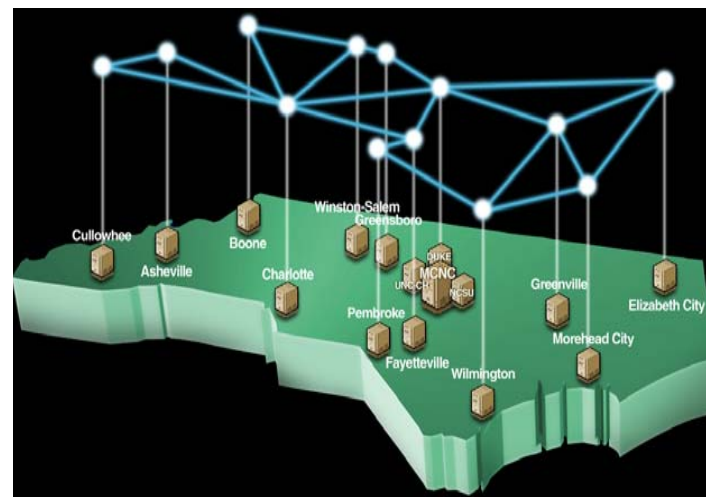
H.323

NCSU

UNCW

WFU

WSSU*



*NCREN sites with AG nodes

Interest and Outcomes

- Nov. 2004: St. Augustines
- Feb. 2005: ECU, ECSU, NCA&T
- Mar. 2005: NSF CCLI Session*
- Apr. 2005: NCICU
- Apr. 2005: NC DOT



Challenges

- Testing and preparations
- Local viewing experience
- Sharing presentations
- Scheduling
- Managing expectations



Similar Options

- inSORS

www.insors.com

- VRVS

www.vrvs.org

- Others?



Thank You:

Tom Coffin

tcoffin@ncsa.uiuc.edu

NCSA-ACCESS

901 North Stuart Street, #800

Arlington, Virginia 22203

cel: 703-477-5948

tel: 703-248-0105

fax: 703-248-0100



THANKS TO EACH OF YOU!!!

QUESTIONS???

darleene@ncrn.net

